Suzie wants to know the effect of different colors of light on the growth of plants. She believes that plants can survive best in white light. She buys 5 ferns of the same species, which are all approximately the same age and height. She places one in white light, one in blue light, one in green light, one in red light and one in the closet. She provides them the same amount of water each day and measures them after two weeks.

1. What is Suzie’s independent variable?
2. What is Suzie’s dependent variable?
3. What are 2 constants in this experiment?

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1. What is Suzie’s problem?
2. What is Suzie’s hypothesis?
3. What is Suzie’s control (standard of comparison)?

John wants to know the effect of different temperatures for baking pizza. He thinks that baking at 350 degrees will make the crust crispiest. He buys 5 pizzas of the same size and type. He bakes one at 330, one at 340, one at 350, one at 360 and one at 370 degrees. He bakes all the pizzas for 10 minutes, takes each out of the oven and measures for crispness.

1. What is John’s problem?
2. What is John’s hypothesis?
3. Does John’s experiment have a control? If so, what is it? If not, what should it be?

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1. What is John’s independent variable?
2. What is John’s dependent variable?
3. What are 2 constants in this experiment?

Isaiah wants to know the effect of different brands of dog food on his dog’s appetite. He thinks that Purina is his dog’s favorite. He feeds his dog the same amount of food and at the same time every day. He buys Purina, Iams, Science Diet, and Tom-Boy brands. When he feeds his dog, he measures the amount of time it takes his dog to eat all the food.

1. What is Isaiah’s problem?
2. What is Isaiah’s hypothesis?
3. Is this a good experiment? Why or why not?

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1. What is Isaiah’s independent variable?
2. What is Isaiah’s dependent variable?
3. What are 2 constants in this experiment?

Charlotte wants to know if more or less water added to brownie mix makes brownies chewier. She thinks more water will make brownies chewier. Using three identical boxes of brownies, she mixes one pan with 4 oz of water, one with 5 oz of water, and one with 6 oz of water. She has her family test the brownies for the chewiest without telling them which is which.

1. What is Charlotte’s problem?
2. What is Charlotte’s hypothesis?
3. What could Charlotte do to improve her experiment?

Charlotte wants to know if more or less water added to brownie mix makes brownies chewier. She thinks more water will make brownies chewier. Using three identical boxes of brownies, she mixes one pan with 4 oz of water, one with 5 oz of water, and one with 6 oz of water. She has her family test the brownies for the chewiest without telling them which is which.

1. What is Charlotte’s independent variable?
2. What is Charlotte’s dependent variable?
3. What are 2 constants in this experiment?

Brad heard that the amount of sleep affects test scores. He doesn’t believe that sleeping more will help him on his tests. He decides to test his hypothesis by looking at 2 groups of 2 students: those that sleep 8-10 hours per night and those that sleep 4-5 hours per night. Then he examines the average test scores over a semester per group.

1. What is the independent variable?
2. What is the dependent variable?
3. Name 2 things he should try to keep constant.

Brad heard that the amount of sleep affects test scores. He doesn’t believe that sleeping more will help him on his tests. He decides to test his hypothesis by looking at 2 groups of 2 students: those that sleep 8-10 hours per night and those that sleep 4-5 hours per night. Then he examines the average test scores over a semester per group.

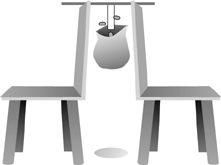
1. What is Brad’s problem?
2. What is Brad’s hypothesis?
3. What could Brad do to improve this experiment?

Tonya was a member of the track team and she wanted to figure out which shoes would help her run the fastest. She heard that Nike was the best. She decided to test it by running a mile in each pair of shoes: Asics, New Balance, Nike, and Adidas. One Saturday, she has a friend time each mile that she runs in each pair of shoes. She runs a mile in the Asics, then New Balance, then Nike, and finally Adidas.

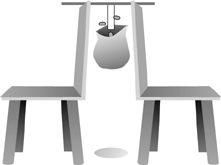
1. What is Tonya’s problem?
2. What is Tonya’s hypothesis?
3. What is wrong with the way Tonya designed her experiment?

Tonya was a member of the track team and she wanted to figure out which shoes would help her run the fastest. She heard that Nike was the best. She decided to test it by running a mile in each pair of shoes: Asics, New Balance, Nike, and Adidas. One Saturday, she has a friend time each mile that she runs in each pair of shoes. She runs a mile in the Asics, then New Balance, then Nike, and finally Adidas.

1. What is the independent variable?
2. What is dependent variable?
3. What are 2 things she should try to keep constant?

One day Dan and Jesse started arguing in class about which type of glue was the strongest: liquid glue or glue stick. Dan said that liquid glue was stronger and he decided to prove it by doing an experiment. He glued 2 pieces of cardboard together and hung them as shown above. Then he measured the number of pennies that each type of glue could hold before the cardboard pieces separated. He did the experiment once for each type of glue.

1. What is Dan’s problem?
2. What is Dan’s hypothesis?
3. How could Dan make his results more reliable?

One day Dan and Jesse started arguing in class about which type of glue was the strongest: liquid glue or glue stick. Dan said that liquid glue was stronger and he decided to prove it by doing an experiment. He glued 2 pieces of cardboard together and hung them as shown above. Then he measured the number of pennies that each type of glue could hold before the cardboard pieces separated. He did the experiment once for each type of glue.

1. What is the independent variable?
2. What is dependent variable?
3. What are 2 things he should try to keep constant?

A shopping mall wanted to determine which floor wax was better at protecting its floor tiles against scratches. They assumed that the more expensive “Tough Stuff” floor wax was better than the cheaper “Steel Seal” floor wax. One liter of each grade of floor wax was applied to each of the 5 test sections of the main hall of the mall. The test sections were all the same size and were covered with the same kind of tiles. Five other test sections received no wax. After 3 weeks, the number of scratches in each of the test sections was counted.

1. What is the problem?
2. What is the hypothesis?
3. What was the control?

A shopping mall wanted to determine which floor wax was better at protecting its floor tiles against scratches. They assumed that the more expensive “Tough Stuff” floor wax was better than the cheaper “Steel Seal” floor wax. One liter of each grade of floor wax was applied to each of the 5 test sections of the main hall of the mall. The test sections were all the same size and were covered with the same kind of tiles. Five other test sections received no wax. After 3 weeks, the number of scratches in each of the test sections was counted.

1. What is the independent variable?
2. What is dependent variable?
3. What are 2 constants?

Ann wanted to discover the right amount of water to use on a plant. She believed the package recommendation of 50 ml would be best. She planted 10 seeds in each of 5 pots found around the house that contained 500g of “Pete’s Potting Soil.” The pots were given the following amounts of distilled water each day for 40 days: Pot 1, 50ml; Pot 2, 100ml; Pot 3, 150ml; Pot 4, 200ml; Pot 5, 250ml. The height of each plant was measured at the end of the experiment.

1. What is the problem?
2. What is the hypothesis?
3. Does this experiment have a control? If so, what is it? If not, what should it be?